SEQUENCE LISTING

<110>   Accola, Molly
         Wigdal, Susan S.
         Mast, Andrea L.
         Bartholomay, Christian T.
         Kwiatkowski, Jr., Robert W.
         Tevere, Vincent
         Ip, Hon S.

<210>   1
<211>   32
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   1
tttggttgtg ctgtggctcc ttggaaagtg at   32

<210>   2
<211>   30
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   2
cgcgccgagg atattccatg tcctattgtg   30

<210>   3
<211>   58
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   3
caatctacac aataggacat ggaatattca ctttccaagg agccacagca caaccaaa   58

-1-

```
<210>  4
<211>  40
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  4
gtttaccttc tgttggcatg tcaatgaact taaagactct                          40


<210>  5
<211>  24
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  5
cgcgccgagg agctcacaga tcgc                                           24


<210>  6
<211>  59
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  6
tcagatgcga tctgtgagct gagtctttaa gttcattgac atgccaacag aaggtaaac    59


<210>  7
<211>  28
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  7
cagggaaatt gccgagtgac cgccatgt                                       28


<210>  8
<211>  27
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  8
acggacgcgg agggcagaac aatgcag                                        27
```

```
<210>   9
<211>   50
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   9
ctcattctgc attgttctgc ccatggcggt cactcggcaa tttccctggg          50


<210>   10
<211>   54
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   10
gactctcctt ttggatacct agatgtttta acagaaaaag aaatatttga aagt      54


<210>   11
<211>   36
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   11
cgcgccgagg atatgttctt tgaatacctt acttat                        36


<210>   12
<211>   79
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   12
ataagtaagg tattcaaaga acatatcttt caaatatttc tttttctgtt aaaacatcta   60

ggtatccaaa aggagagtc                                            79


<210>   13
<211>   38
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   13
ccccaaactc tccagtctgt ttaaaagatt attttttc                      38
```

```
<210>   14
<211>   28
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   14
cgcgccgagg gtttctgtcc aggagaca                                              28


<210>   15
<211>   47
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   15
gctttgatga cgcttctgta tctatattca tcataggaaa caccaat                         47


<210>   16
<211>   32
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   16
cgcgccgagg agatattttc tttaatggtg cc                                         32


<210>   17
<211>   77
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   17
gcctggcacc attaaagaaa atatctttgg tgtttcctat gatgaatata gatacagaag          60

cgtcatcaaa gcatgcc                                                          77


<210>   18
<211>   41
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   18
gcccttcggc gatgtttttt ctggagattt atgttctatg t                              41
```

```
<210>  19
<211>  37
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  19
acggacgcgg agaaatcttt ttatatttag gggtaag                                37


<210>  20
<211>  74
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  20
agatccttac ccctaaatat aaaaagattt catagaacat aaatctccag aaaaaacatc     60

gccgaagggc atta                                                        74


<210>  21
<211>  39
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  21
aatcatagct tcctatgacc cggataacaa ggaggaact                             39


<210>  22
<211>  29
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  22
cgcgccgagg actctatcgc gatttatct                                        29


<210>  23
<211>  63
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  23
atgcctagat aaatcgcgat agagtgttcc tccttgttat ccgggtcata ggaagctatg     60

att                                                                    63
```

```
<210>   24
<211>   53
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   24
catgaatgac atttacagca aatgcttgct agaccaataa ttagttattc act          53


<210>   25
<211>   33
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   25
acggacgcgg aggttgctaa agaaattctt gct                                 33


<210>   26
<211>   83
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   26
caacgagcaa gaatttcttt agcaacgtga ataactaatt attggtctag caagcatttg    60

ctgtaaatgt cattcatgta aaa                                            83


<210>   27
<211>   49
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   27
gcaattttgg atgaccttct gcctcttacc atatttgact tcatccagt               49


<210>   28
<211>   34
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic

<400>   28
cgcgccgagg atatgtaaaa ataagtaccg ttaa                                34
```

<210> 29
<211> 86
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 29
agacatactt aacggtactt attttacat atctggatga agtcaaatat ggtaagaggc   60

agaaggtcat ccaaaattgc tatatc   86

<210> 30
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 30
gagagttggc cattcttgta tggtttggtt gactttt   36

<210> 31
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 31
cgcgccgagg gtaggtttac cttctgttgg   30

<210> 32
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 32
catgccaaca gaaggtaaac ctacaagtca accaaaccat acaagaatgg ccaactctc   59

<210> 33
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 33
cctgaaagat attaatttca agatagaaag aggacagttg ttggt   45

```
<210>  34
<211>  27
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  34
acggacgcgg agaggttgct ggatcca                                          27


<210>  35
<211>  63
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  35
ccagtggatc cagcaacctc caacaactgt cctctttcta tcttgaaatt aatatctttc      60

agg                                                                    63


<210>  36
<211>  34
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  36
agtgcatagg gaagcacaga taaaaacacc acat                                  34


<210>  37
<211>  29
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  37
cgcgccgagg agaaccctga gaagaagaa                                        29


<210>  38
<211>  56
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  38
agccttcttc ttctcagggt tcttgtggtg tttttatctg tgcttcccta tgcact          56
```

<210> 39
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 39
gcagagaaag acaatatagt tcttggagaa ggtggaatca cactgagtgg agt   53

<210> 40
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 40
cgcgccgagg atcaacgagc aagaatttct   30

<210> 41
<211> 86
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 41
cttgctaaag aaattcttgc tcgttgatct ccactcagtg tgattccacc ttctccaaga   60

actatattgt ctttctctgc aaactt   86

<210> 42
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 42
aaatcaaact aaacatagct attctcatct gcattccat   39

<210> 43
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 43
acggacgcgg aggtgtgatg aaggccaaa   29

```
<210>  44
<211>  60
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  44
ccatttttgg ccttcatcac actggaatgc agatgagaat agctatgttt agtttgattt      60


<210>  45
<211>  40
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  45
ccatatttct tgatcactcc actgttcata gggatccaat                           40


<210>  46
<211>  35
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  46
cgcgccgagg ctttttttcta aatgttccag aaaaa                               35


<210>  47
<211>  74
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  47
atttattttt tctggaacat ttagaaaaaa gttggatccc tatgaacagt ggagtgatca     60

agaaatatgg aaag                                                      74


<210>  48
<211>  61
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  48
gcctttccag ttgtataatt tataacaata gtgcctaaaa gattaaatca ataggtacat     60

t                                                                    61
```

```
<210>  49
<211>  32
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  49
cgcgccgagg aattcatcaa atttgttcag gt                                    32


<210>  50
<211>  82
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  50
acctgaacaa atttgatgaa ttatgtacct attgatttaa tcttttaggc actattgtta     60

taaattatac aactggaaag gc                                              82


<210>  51
<211>  63
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  51
gcctttcaaa ttcagattga gcatactaaa agtgactctc taattttcta ttttggtaa      60

tat                                                                   63


<210>  52
<211>  28
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  52
cgcgccgagg agacatctcc aagtttgc                                        28
```

```
<210>  53
<211>  89
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  53
ctctgcaaac ttggagatgt cttattacca aaaatagaaa attagagagt cactttttagt        60

atgctcaatc tgaatttgaa aggcacatc                                           89


<210>  54
<211>  34
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  54
gctcacctgt ggtatcactc caaaggcttt ccta                                     34


<210>  55
<211>  30
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  55
cgcgccgagg tcactgttgc aaagttattg                                          30


<210>  56
<211>  59
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  56
gattcaataa ctttgcaaca gtgaaggaaa gcctttggag tgataccaca ggtgagcaa          59


<210>  57
<211>  35
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  57
caagagtctt ccatctgttg cagtattaaa atgga                                    35
```

```
<210>  58
<211>  29
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  58
cgcgccgagg tgagtaagac accctgaaa                                        29


<210>  59
<211>  57
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  59
ttcctttcag ggtgtcttac tcaccatttt aatactgcaa cagatggaag actcttg         57


<210>  60
<211>  65
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  60
catttacagc aaatgcttgc tagaccaata attagttatt caccttgcta aagaaattct      60

tgctg                                                                   65


<210>  61
<211>  28
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  61
cgcgccgagg cattgacctc cactcagt                                          28


<210>  62
<211>  82
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  62
actgagtgga ggtcaatgag caagaatttc tttagcaagg tgaataacta attattggtc      60

tagcaagcat ttgctgtaaa tg                                                82
```

```
<210>    63
<211>    35
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Synthetic

<400>    63
tccaagtttg cagagaaaga caatatagtt ctttc                                  35


<210>    64
<211>    27
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Synthetic

<400>    64
cgcgccgagg gagaaggtgg aatcaca                                           27


<210>    65
<211>    51
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Synthetic

<400>    65
tgtgattcca ccttctcaaa gaactatatt gtctttctct gcaaacttgg a                51


<210>    66
<211>    59
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Synthetic

<400>    66
ccttcatcac attggaatgc agatgagaat agctatgttt agtttgattt ataagaagc        59


<210>    67
<211>    30
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Synthetic

<400>    67
cgcgccgagg ttaatacttc cttgcacagg                                        30
```

```
<210>  68
<211>  86
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  68
ggggcctgtg caaggaagta ttaacttctt ataaatcaaa ctaaacatag ctattctcat      60

ctgcattcca atgtgatgaa ggccaa                                           86


<210>  69
<211>  41
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  69
cgcagaacaa tgcagaatga gatggtggtg aatattttcc t                          41


<210>  70
<211>  31
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  70
cgcgccgagg agaggatgat tcctttgatt a                                     31


<210>  71
<211>  66
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  71
tgcactaatc aaaggaatca tcctctggaa aatattcacc accatctcat tctgcattgt      60

tctgcg                                                                 66


<210>  72
<211>  44
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  72
tgtacttcat gctgtctaca ctaagagaga atgagagaca caca                       44
```

```
<210>  73
<211>  30
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  73
tccgcgcgtc ctgaagaagc accaatcatg                                          30


<210>  74
<211>  68
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  74
tttcatgatt ggtgcttctt cagtgtgtct ctcattctct cttagtgtag acagcatgaa        60

gtacattt                                                                  68


<210>  75
<211>  33
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic


<220>
<221>  misc_feature
<222>  (3)..(3)
<223>  The residue at this position is linked to a Z28 quenching group.

<400>  75
tctagccggt tttccggctg agacctcggc gcg                                      33


<210>  76
<211>  35
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic


<220>
<221>  misc_feature
<222>  (3)..(3)
<223>  The residue at this position is linked to a Z28 quenching group.

<400>  76
tctagccggt tttccggctg agactccgcg tccgt                                    35
```

```
<210>  77
<211>  34
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic


<220>
<221>  misc_feature
<222>  (3)..(3)
<223>  The residue at this position is linked to a Z28 quenching group.

<400>  77
tcttcggcct tttggccgag agaggacgcg cgga                              34


<210>  78
<211>  40
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  78
tgatgacgct tctgtatcta tattcatcat aggaaacaca                        40


<210>  79
<211>  35
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  79
cgcgccgagg caaagatgat attttcttta atggt                             35


<210>  80
<211>  39
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  80
agctcgtccg acacaataat attttcttta atggtgcca                         39
```

```
<210>  81
<211>  33
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic


<220>
<221>  misc_feature
<222>  (3)..(3)
<223>  The residue at this position is linked to a Z28 quenching group.

<400>  81
tctagccggt tttccggctg agacctcggc gcg                                    33


<210>  82
<211>  36
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic


<220>
<221>  misc_feature
<222>  (3)..(3)
<223>  The residue at this position is linked to a Z28 quenching group.

<400>  82
tcttcggcct tttggccgag agatgtcgga cgagct                                 36


<210>  83
<211>  74
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  83
tgcctggcac cattaaagaa aatatcatct ttggtgtttc ctatgatgaa tatagataca      60

gaagcgtcat caaa                                                         74


<210>  84
<211>  72
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  84
atgcctggca ccattaaaga aaatatcatt ggtgtttcct atgatgaata tagatacaga      60

agcgtcatca aa                                                           72
```

```
<210>  85
<211>  46
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  85
cttccttttt tccccaaact ctccagtctg tttaaaagat tgttta                    46


<210>  86
<211>  28
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  86
cgcgccgagg tttgtttctg tccaggag                                        28


<210>  87
<211>  31
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  87
acggacgcgg agttttgttt ctgtccagga g                                    31


<210>  88
<211>  33
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  88
acggacgcgg agaattcatc aaatttgttc agg                                  33


<210>  89
<211>  31
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  89
acggacgcgg agtgagtaag acaccctgaa a                                    31
```